NWD-455 FlexiDome IP Cameras

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BOSCH
Invented for life

- High-impact, vandal-resistant enclosure
- Advanced color CCD network dome camera
- NightSense for low light situations
- High-performance H.264, MPEG-4, and M-JPEG
- Direct-to-iSCSI recording

The NWD-455 FlexiDome IP is a high-performance, 1/3-inch CCD network camera, designed to ensure the highest possible image quality at all times. This ultra-compact and vandal-resistant camera provides DVD-like quality MPEG-4 video at up to 25 and 30 images per second (for PAL and NTSC respectively) or H.264 encoding. Network video signals are sent over IP networks and can be received and displayed on a PC web browser, viewed and recorded using the DiBos hybrid recording system, or managed as part of a VIDOS or BVMS video management system. Moreover, a BOSCH Video over IP (BVIP) decoder can decode the stream for viewing on a CVBS or VGA monitor. FlexiDome IP uses H.264 or MPEG-4 compression, bandwidth throttling, and multicasting capabilities to manage bandwidth and storage requirements efficiently, while delivering the best image quality and resolution. The analog video service output and the on-screen displays (OSD) simplify focus adjustment and network configuration, leading to lower installation and support costs. Power over Ethernet (PoE) makes installation easier and more cost-effective, since these cameras no longer require AC power.

Functions

H.264 Baseline Profile Encoding
Firmware version 4.0 and higher enables the camera to use H.264 Baseline Profile to encode the video signal. This reduces the required bit rate for a given quality setting, or increases the quality while keeping the bit rate setting.
Because H.264 Baseline Profile does not support field encoding, interlaced video is not possible, thus resolution is limited to a maximum of 2CIF. H.264 encoding requires double the performance in respect to MPEG-4. Frame rate values must therefore be divided by two.

MPEG-4 video encoding
The FlexiDome MPEG-4 encoder creates high-quality streaming video at low bit rates, minimizing bandwidth and storage requirements, which further reduces costs. Each FlexiDome IP camera can deliver up to 25 and 30 images per second (PAL and NTSC) at true 4CIF video resolution.

ONVIF
ONVIF (Open Network video Interface Forum) compliancy ensures integration with third party management systems and video network devices.

Intelligence
The FlexiDome IP supports increased intelligence at the edge that provides powerful tamper detection for various combined picture cases arising from: video loss, masking, hooding, defocusing, and diverted camera. Bosch also offers Intelligent Video Motion Detection (IVMD) as an additional licensable option. This provides video content analysis (VCA) directly at the video input for even more advanced VCA.

Tri-streaming video
FlexiDome IP cameras can generate two separate H. 264/MPEG-4 video streams and one JPEG stream simultaneously, while giving access to five users at a time. This advanced tri-streaming capability, not typically found in other IP CCTV systems, enables the user to optimize live viewing and recording requirements to meet specific site and enterprise needs. For example, BOSCH Video over IP Systems (BVIP) can be configured to record video at one quality setting (e.g. 3.75 IPS at 2CIF), while simultaneously providing live images at the best possible image quality (e.g. 30 IPS at 4CIF). Alternatively, the system deliver a high bandwidth, H. 264/MPEG-4 stream to a local LAN user, while simultaneously streaming a low bandwidth H.264/ MPEG-4 stream to a remote user over a WAN connection, while using the JPEG stream for remote viewing, for instance, on a PDA.

Power options
Three power options, PoE, 24 VAC (12 to 28 VAC) and 12 VDC (+11 to +36 VDC), are available on the NWD-455. Utilizing PoE makes installation easier and more cost-effective, since cameras do not require a local AC power source. Additionally, they can use an uninterruptible power supply (UPS), which will allow continuous operation, even during a power failure, e.g. in emergencies.

OSD-based network setup
Network parameters and basic camera set-up, such as lens set-up and back focus, are quickly and easily performed using the on-screen displays (OSD) and analog video service output. Unlike other IP cameras, no network connection, PC configuration utilities, or other tools are required to set up FlexiDome IP.

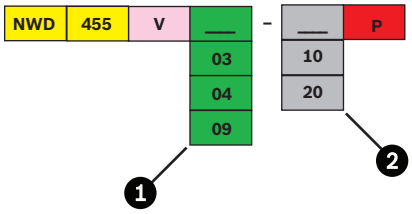
Recording
The FlexiDome IP cameras offer unparalleled recording options – network-attached utilizing iSCSI devices, and of course centrally, using network video recorders (NVRs). The iSCSI RAID 5 storage support enables a camera to act as a conventional DVR, while streaming high-performance live video across the network. The cameras also offers 10 Mb internal RAM storage.

Certifications and approvals

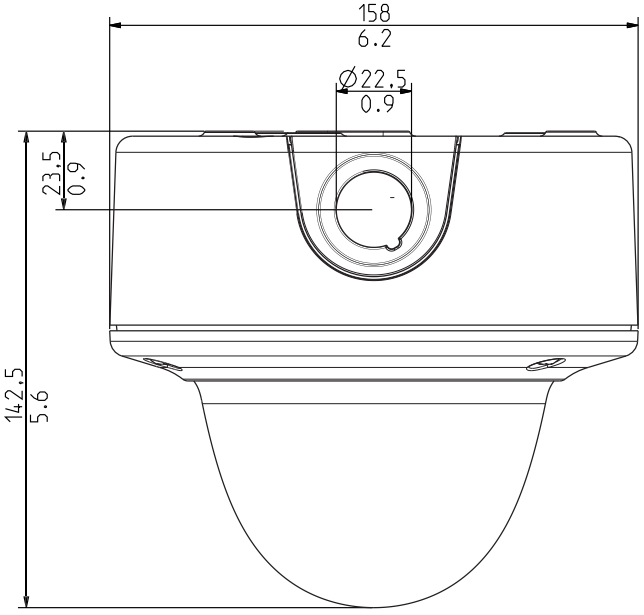
Safety	acc. to EN 60950-1 (CE)
	acc. to UL 60950-1
Immunity	acc. to EN 50130-4 (CE)
Emission	acc. to EN 55022 class B (CE)
	acc. to EN 61000-3-2 (CE); EN 61000-3-3 (CE)
	acc. to FCC CFR 47 Part 15, Class B
	acc. to AS/NZS CISPR 22 (equal to CISPR 22)

Region	Certification	
Europe	CE	Declaration of Conformity
USA	FCC	Declaration of Conformity

Installation/configuration notes

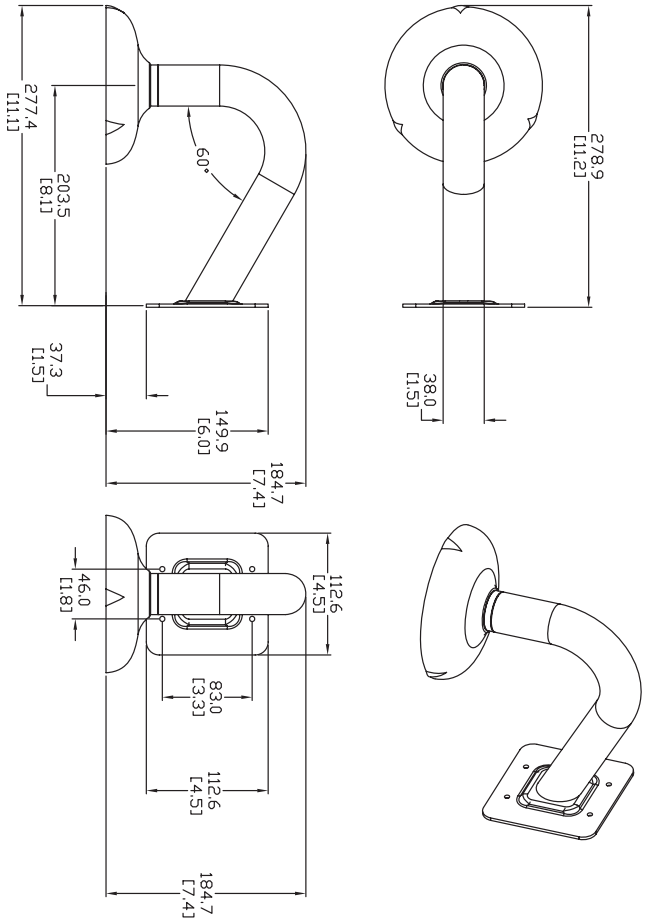


1	03	2.6 to 6 mm F1.4
	04	3.7 to 12 mm F1.6
	09	9 to 22 mm F1.4
2	10	PAL color or CCIR mono
	20	NTSC color or EIA mono

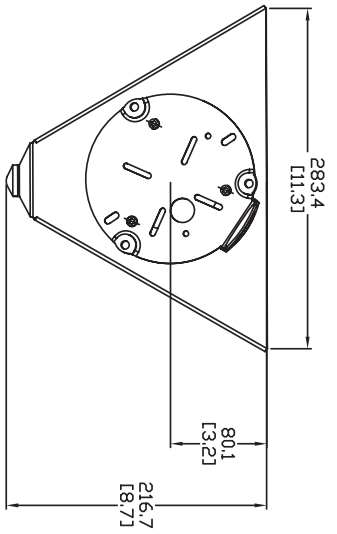


Dimensions in mm (in)

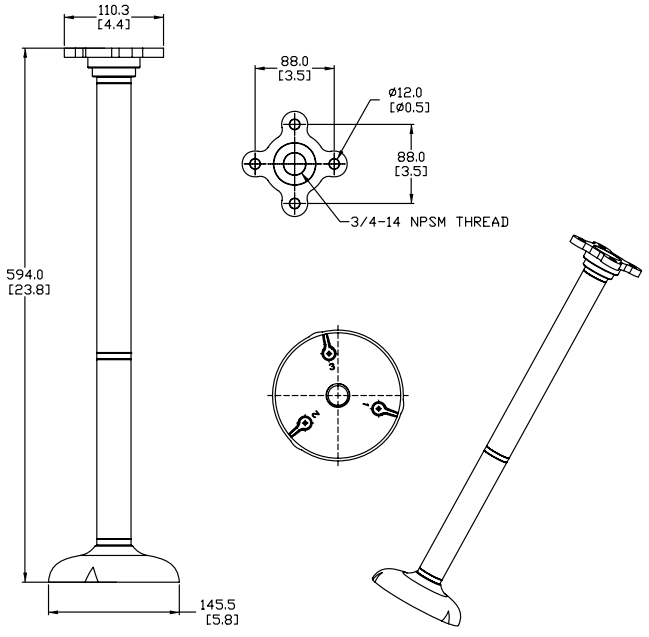
VDA-NWDWMT Wall Mount



VDA-NWDCMT Corner Mount



VDA-NWDPMT Pipe Mount



Parts included

Quantity	Component
1	FlexiDome IP Camera
1	Focus aid
1	Quick Installation Guide
1	CD-ROM with manual, software, and tools

Technical specifications

Electrical

Power		
Input voltage	+11 to +36 VDC (750 mA)	
	12 to 28 VAC, 45/65 Hz* (850 mA)	
	PoE, IEEE 802.3af	
Power consumption	10.5 VA (max)	
Connector	3-pole push-in	
Video		
Video compression	MPEG-4/H.264; M-JPEG	
GOP structure	I, IP	
Data rate	9.6 Kbps to 6 Mbps (const. and variable)	
Sensor	1/3-inch interline CCD	
Sensor matrix		
PAL	752 x 582	
NTSC	768 x 494	
Resolutions and frame rates	PAL	NTSC

4CIF: 25/30 IPS	704 x 576	704 x 480
2CIF: 25/30 IPS	704 x 288	704 x 240
half D1: 25/30 IPS	352 x 576	352 x 480
CIF: 25/30 IPS	352 x 288	352 x 240
QCIF: 25/30 IPS	176 x 144	176 x 120
Video out	1 x	
signal	Analog composite (NTSC or PAL)	
connector	2.5 mm jack socket, 75 ohm	
Video S/N	50 dB	

Sensitivity (3200 K, scene reflectivity 89%)	Usable picture (30 IRE)	Usable picture (50 IRE)	Full video (100 IRE)
NWD-455V03			
NightSense	0.18 lx (0.016 fc)	0.39 lx (0.036 fc)	1.6 lx (0.15 fc)
color	0.44 lx (0.041 fc)	0.98 lx (0.091 fc)	3.9 lx (0.36 fc)
NWD-455V04			
NightSense	0.23 lx (0.021 fc)	0.5 lx (0.048 fc)	2.0 lx (0.19 fc)
color	0.58 lx (0.053 fc)	1.3 lx (0.12 fc)	5.1 lx (0.48 fc)
NWD-455V09			
NightSense	0.18 lx (0.016 fc)	0.39 lx (0.036 fc)	1.6 lx (0.15 fc)
color	0.44 lx (0.041 fc)	0.98 lx (0.091 fc)	3.9 lx (0.36 fc)

BLC	Center window weighting
Gain	20 dB (max)
White balance	Auto (2500 to 10000 K), AWB hold
Auto black	On/off selectable
Electronic shutter	
PAL	1/50 to 1/150000 s (auto),
NTSC	1/60 to 1/150000 s (auto)

Optical

Varifocal	IR-corrected, manual zoom and focus adjustment
Iris control	Automatic
Viewing angle 2.6 to 6 mm	Wide 98.5º x 75.3º (H x V)
	Tele 48.1º x 36.2º (H x V)
Viewing angle 3.7 to 12 mm	Wide 76.1º x 55.8º (H x V)
	Tele 23.8º x 17.9º (H x V)
Viewing angle 9 to 22 mm	Wide: 31.2º x 22.8º (H x V)
	Tele: 12.8º x 9.6º (H x V)

Software control

Unit configuration	Via web browser or Configuration Manager
Flicker control	50/60 Hz, selectable
Sharpness	Horizontal and vertical, symmetrical
Firmware	Flash ROM, remote update

Network

Protocols	Telnet, RTP, HTTP, ARP,TCP, UDP, IP, ICMP, IGMPv2/v3, SNMP, 802.1x
Ethernet	10/100 Base-T, auto-sensing, half/full duplex, RJ45
Overall unit delay	120 ms (MPEG-4)
PoE	IEEE 802.3af compliant

Mechanical

Dimensions (H x W x D)*	See drawing
Weight (without lens)	Approx. 1.8 kg (3.96 lb)
Mounting	
Color	White (RAL 9010), black inner liner
Material	
dome bubble	Polycarbonate, clear, UV-blocking, anti-scratch coating
Trim ring, camera body	Aluminum
Adjustment range	360º pan, 90º tilt, ±90º azimuth

Environmental

Operating temperature	-10 ºC to +40 ºC (+14 ºF to +104 ºF)
Storage temperature	-25 ºC to +70 ºC (-13 ºF to +158 ºF)
Humidity	20% to 80% relative humidity (noncondensing)
Water/dust protection	IP 54, NEMA-3R

Ordering information

NWD-455V03-10P FlexiDomeXT IP Camera
PAL, 2.6 to 6 mm F1.4 lens
Order number **NWD-455V03-10P**

NWD-455V03-20P FlexiDomeXT IP Camera
NTSC, 2.6 to 6 mm F1.4 lens
Order number **NWD-455V03-20P**

NWD-455V04-10P FlexiDomeXT IP Camera
PAL, 3.7 to 12 mm F1.6 lens
Order number **NWD-455V04-10P**

NWD-455V04-20P FlexiDomeXT IP Camera
NTSC, 3.7 to 12 mm F1.6 lens
Order number **NWD-455V04-20P**

NWD-455V09-10P FlexiDomeXT IP Camera
PAL, 9 to 22 mm F1.4 lens
Order number **NWD-455V09-10P**

NWD-455V09-20P FlexiDomeXT IP Camera
NTSC, 9 to 22 mm F1.4 lens
Order number **NWD-455V09-20P**

Accessories

UPA-1509-60 Power Supply
Power supply for camera. 120 VAC, 60 Hz In; 15 VDC, 9 VA Out
Order number **UPA-1509-60**

UPA-1509-50 Power Supply
Power supply for camera. 220 VAC, 50 Hz In; 15 VDC, 9 VA Out
Order number **UPA-1509-50**

UPA-2420-50 Power Supply
Power supply for cameras. 220 VAC, 50 Hz In; 24 VAC, 20 VA Out
Order number **UPA-2420-50**

UPA-2450-50 Power Supply, 220 V, 50 Hz
Indoor power supply for camera. 220 VAC, 50 Hz In; 24 VAC, 50 VA Out
Order number **UPA-2450-50**

VDA-NWDPMT
Pendant mount for FlexiDome IP Series
Order number **VDA-NWDPMT**

VDA-NWDWMT
Wall mount for FlexiDome IP Series
Order number **VDA-NWDWMT**

VDA-NWDCMT
Corner mount for FlexiDome IP Series
Order number **VDA-NWDCMT**

VDA-NWDFMT Flush-mount Ceiling Kit
Order number **VDA-NWDFMT**

VDA-NWDSKT Support Kit for VDA-NWDFMT
Order number **VDA-NWDSKT**

VDA-455TBL Tinted bubble
Tinted bubble for FlexiDome series
Order number **VDA-455TBL**

VDA-455CBL Clear bubble
Clear Bubble for FlexiDome series
Order number **VDA-455CBL**

Software Options

NWD-4X5-FS1
FlexiDome IP IVMD 1.0 VCA software license
Order number **NWD-4X5-FS1**

NWD-4X5-FS2
FlexiDome IP IVMD 2.0 VCA software license
Order number **NWD-4X5-FS2**

NWD-4X5-FS3
FlexiDome IP IVA 3.0 VCA software license
Order number **NWD-4X5-FS3**

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